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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,318	09/18/2003	Roger W. Phillips	78390	7905

27975 7590 03/23/2005

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EXAMINER	
BOUTSIKARIS, LEONIDAS	
ART UNIT	**PAPER NUMBER**
2872	

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EIL

Office Action Summary	Application No.	Applicant(s)	
	10/666,318	PHILLIPS ET AL.	
	Examiner	Art Unit	
	Leo Boutsikaris	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/12/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

> The oath or declaration is defective because:
> It does not identify the mailing address of each inventor. A mailing address is an address at which an inventor customarily receives his or her mail and may be either a home or business address. The mailing address should include the ZIP Code designation. The mailing address may be provided in an application data sheet or a supplemental oath or declaration. See 37 CFR 1.63(c) and 37 CFR 1.76.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Drinkwater (US 6,712,399).

Regarding claim 1, Drinkwater discloses an optical structure in the form of a security document (Fig. 1) comprising:

a light transmissive substrate 3 having a first surface (bottom) and an opposing second surface (top), the second surface having a surface relief pattern 4 formed thereon;

a patterned layer 5 of reflective material applied onto portions of the surface relief pattern 4 of the substrate 3, such that some portions of the surface relief pattern are covered by the reflective material, and other portions are exposed;

and an optically active coating 6 underlying the patterned layer 5 and exposed portions of the surface relief pattern 4 (lines 8-26, 32-41, 52-57, col. 4).

Regarding claim 2, the optically active coating 6 is colored, i.e., it has color shifting optical properties (lines 52-53, col. 4).

Regarding claim 13, the surface relief pattern 4 is a holographic image pattern (line 23, col. 4).

Claims 1-2, 7, 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Walters (US 5,742,411).

Regarding claim 1, Walters discloses an optical structure in the form of a security document (Fig. 1) comprising:

a light transmissive substrate 101 having a first surface (bottom) and an opposing second surface (top), the second surface having a surface relief pattern 103 formed thereon;

a patterned layer 105 of reflective material applied onto portions of the surface relief pattern 103 of the substrate 101, such that some portions of the surface relief pattern are covered by the reflective material, and other portions are exposed;

and an optically active coating 107 underlying the patterned layer 105 and exposed portions of the surface relief pattern 103 (lines 31-47, col. 3).

Regarding claim 2, the optically active coating 107 is colored, i.e., it has color shifting optical properties, since it comprises polyester or vinyl material.

Regarding claims 7, 14, the optically active coating 107 has an index of refraction substantially matched to the index of refraction of the light transmissive substrate 101, since they both comprise the same material (lines 4-5, col. 4). This results in the optical effects of the surface relief not be visible in the exposed portions of the surface relief pattern.

Claims 1-2, 14 is rejected under 35 U.S.C. 102(b) as being anticipated by Mallik (US 5,411,296).

Mallik discloses an optical structure in the form of a security document (Fig. 12) comprising:

a light transmissive substrate 119 having a first surface (left) and an opposing second surface (right), the second surface having a surface relief pattern 121 formed thereon;

a patterned layer 123 of reflective material applied onto portions of the surface relief pattern 121 of the substrate 119, such that some portions of the surface relief pattern are covered by the reflective material, and other portions are exposed;

and a coating 125 underlying the patterned layer 123 and exposed portions of the surface relief pattern 121 having an index of refraction substantially matched to the index of refraction of the light transmissive substrate 119, since they both comprise the same material, i.e., resin (lines 28-59, col. 11). This results in the optical effects of the surface relief not be visible in the exposed portions of the surface relief pattern. It is noted that layers 119, 125 comprise resin, which have generally yellowish to brown hue.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 9-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Kay (US 2004/0100707).

Regarding claim 1, Kay discloses an optical structure in the form of a security document (Fig. 2) comprising:

a light transmissive substrate 1 having a first surface (top) and an opposing second surface (bottom), the second surface having a surface relief pattern 2 formed thereon;

a patterned layer 4 of reflective material applied onto portions of the surface relief pattern 2 of the substrate 1, such that some portions of the surface relief pattern are covered by the reflective material, and other portions are exposed;

and an optically active coating (7, 5, 6) underlying the patterned layer 4 and exposed portions of the surface relief pattern 4 ([0034]-[0035], [0040]).

Regarding claim 2, the optically active coating (7, 5, 6) is colored, i.e., it has color shifting optical properties, since it comprises the copper layer 5.

Regarding claim 3, the optically active coating is a thin film optical stack, comprising layers 7, 5 and 6.

Regarding claim 4, the thin film optical stack includes a partially absorbing/partially transmissive layer 6; a dielectric layer 7; and a reflector layer 5.

Regarding claim 9, the patterned layer 4 comprising aluminum is opaque ([0035]).

Regarding claims 10-12, the patterned layer of reflector material 4 has desired design patterns, such as pictorial designs, alphanumeric designs or graphical designs (see lightest areas in Fig. 3, also [0042]).

Regarding claim 13, the surface relief pattern 4 is a holographic image pattern (line 23, col. 4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mallik (US 5,411,296) in view of Phillips (US 5,424,119).

Regarding claims 5, 8, Mallik discloses all the limitations of the above claims except for teaching that layer 125 contains flakes that add colorful optical effects to the exposed portions of the surface relief pattern 123. Phillips discloses the use of bright flake-based pigments, producing colorful effects, in conjunction with security documents, such as bank notes, credit cards, etc. (lines 33-54, col. 9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include colorful flakes in layer 125 of Mallik's security document, as taught by Phillips, for creating an additional level of authentication security (for example, by observing the presence or absence of a color shift, see lines 49-54, col. 9 in Phillips).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mallik (US 5,411,296) in view of Phillips (US 5,424,119) and further in view of Coulter (US 6,150,022).

Mallik in view of Phillips discloses all the limitations of the above claim except for specifying that the flake pigment may comprise a partially absorbing/partially transmitting layer, a dielectric layer, and a reflector layer. Coulter discloses a flake-based pigment, used to produce colorful effects, wherein the flake pigment comprises a metallic reflector layer 10, a dielectric layer 24 and a partially absorbing layer 26 (Fig. 2A, lines 24-26, col. 6, lines 61-65, col. 9, lines 14-16, col. 10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include colorful flakes of the composition shown in Fig. 2A in Coulter in layer 125 of Mallik's security document, since the above type flakes offer improved reflectance properties (see lines 12-21, 44-47, col. 4, in Coulter).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Leo Boutsikaris whose telephone number is 571-272-2308.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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March 20, 2005

LEONIDAS BOUTSIKARIS
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